AMENDMENTS TO THE CLAIMS

Please amend the claims according to the following claim listing. The claims are marked to show changes over the previous claims.

1.-3. (Canceled)

4. (Currently Amended): A method for providing an extended dynamic range in an analyte assay that uses scattered light from light scattering particles at one or more assay sites as signals, said method comprising:

(a) detecting a first set of integrated scattered light intensity signals from light scattering particles at one or more assay sites with a sensor having a dynamic range, wherein the integrated scattered light intensity signal collected from at least one assay site ~~exceeded~~ exceeds the dynamic range of the senor;

(b) applying at least one optical filter having an optical density to provide a reduced-intensity integrated scattered light signal that does not exceed the dynamic range of the sensor, said reduced intensity scattered light signal is from at least one of said ~~at least~~ one or more assay sites in (a) that produced an integrated light scattering signal that exceeded the dynamic range of the sensor;

(c) detecting a second set of integrated scattered light intensity signals from the light scattering particles at said one or more assay sites in (a) with the sensor, said second set comprising the reduced-intensity integrated scattered light signals of step (b);

(d) converting the reduced-intensity integrated scattered light signals in (c) to a scaled signal using a predetermined conversion factor related to the optical density of the optical filter; and

(e) combining the scaled signal with the first set of integrated scattered light intensity signals to provide an extended dynamic range.

5.-15. (Canceled)

16. (Previously presented) The method of claim 4, wherein the conversion factor is determined from a transmission curve for the filter based on the measurements of transmission of light from a white light source through the filter.

17. (Previously presented) The method of claim 16, wherein the transmission curve for the filter is wavelength-dependent.

18. (Currently Amended) The method of claim 4, wherein converting the one or more reduced-intensity signals in (c) to one or more scaled signals comprises the step of multiplying the one or more reduced intensity signals by the conversion factor of the at least one filter.

19. (Previously presented) The method of claim 4, wherein the at least one filter is selected from the group consisting of longpass filters, shortpass filters, bandpass interference filters, filter wheels, neutral density filters, color filters, notch filters, super notch filters, supernotch plus filters, and filter monochrometers.

20. (Previously presented) The method of claim 4, wherein an amount of light transmitted by the at least one filter is selected from the group consisting of 1%, 3.2%, 6.3%, 10%, 13%, 16%, 20%, 25%, 32%, 40%, 50%, 63%, 70%, and 80% of the light entering the filter.

21.-26. (Canceled)

27. (Previously presented) The method of claim 4, wherein the integrated scattered light intensity signals from the light scattering particles comprise light scattered by the light scattering particles, light emitted by fluorescent entities on the light scattering particles, or both.

28. (Canceled)

29. (Previously presented) The method of claim 4, wherein the extended dynamic range comprises integrated scattered light intensity signals quantified over at least four, five, six, or seven orders of magnitude.

30. (Previously presented) The method of claim 4, wherein the dynamic range is extended by at least one order of magnitude over the dynamic range of an assay without the extension of dynamic range and the extended dynamic range is linear.

31. (Previously presented) The method of claim 4, further comprising the step of:

(f) forming an image of one or more of the one or more assay sites with the combined scaled signal and first set of integrated scattered light intensity signals from step (e).

32. (Previously presented) The method of claim 31, wherein forming the image comprises the steps of identifying background portions of the image, and removing signals corresponding to the background portions of the image.

33. (Previously presented) The method of claim 4, wherein the sensor is selected from the group consisting of a camera, a photographic film, a video camera, a charged-coupled device, a charged injection device, a photodiode, a photodiode array, and a photomultiplier tube.

34. (Previously presented) The method of claim 4, wherein said at least one or more assay sites are separately addressable assay sites.

35. (Currently amended) The method of claim 4, wherein said at least one or more assay sites are associated with a physical form selected from the group consisting of a slide, a membrane, a filter, a test tube, a vial, a microtiter plate, a microarray, a small volume device, [[or]] and a gel.

36. (Previously presented) The method of claim 4, wherein said at least one or more assay sites are present in a sample selected from the group consisting of a tissue, a tissue section, a cell culture, a cell, a cell organelle, a chromosome preparation, and a chromosome.

37. (Canceled)

38. (Currently amended) The method of claim 4, further comprising, after step (c) repeating: applying at least one ~~at least one~~ optical filter having an optical density that is different than the at least one optical filter in step (b) to provide a second reduced-intensity integrated scattered light signal that does not exceed the dynamic range of the sensor, said second reduced-intensity scattered light signal is from at least one of said at least one assay site that produced an integrated light scattering signal that exceeded the dynamic range of the sensor; and detecting ~~another~~ a third set of integrated scattered light intensity signals from the light scattering particles at said one or more assay sites with the sensor, said ~~another~~ third set comprising the second reduced-intensity integrated scattered light signals of the repeated step (c).